

**U. S. DEPARTMENT OF ENERGY
WORK BREAKDOWN STRUCTURE DICTIONARY
PART II - ELEMENT DEFINITION**

1. PROJECT TITLE/PARTICIPANT Environmental Management/Paducah Remediation Services LLC (PRS)		2. DATE 06/29/07	3. IDENTIFICATION SITE Paducah Project DOE Portsmouth/Paducah Project Office (PPPO)
4. WBS ELEMENT CODE 04.11.11.04		5. WBS ELEMENT TITLE CERCLA Cell Construction and O&M	
6. INDEX LINE NO. N/A	7. REVISION NO. AND AUTHORIZATION Rev. 0		8. DATE 06/29/07
9. APPROVED CHANGES N/A			
10. SYSTEM DESIGN DESCRIPTION N/A		11. BUDGET AND REPORTING NUMBER N/A	
12. ELEMENT TASK DESCRIPTION <p>THIS IS A PLANNING LEVEL WBS DICTIONARY</p> <p><u>WBS STRUCTURE</u></p> <p>The scope of this element includes the following subelements:</p> <ul style="list-style-type: none"> • WBS 04.11.11.04.01 CERCLA Cell Management and Integration • WBS 04.11.11.04.02 Construction of CERCLA Cell • WBS 04.11.11.04.03 Operation of CERCLA Cell • WBS 04.11.11.04.04 Close CERCLA Cell • WBS 04.11.11.04.05 Design of CERCLA Cell <p><u>INTRODUCTION</u></p> <p>The Paducah Gaseous Diffusion Plant (PGDP) in Paducah, Kentucky, has enriched uranium and performed other related processes since the early 1950s resulting in a legacy of contaminated areas and facilities on and around the plant site. These contaminated areas and facilities require cleanup and restoration which will generate a substantial amount of waste that will require treatment and/or disposal.</p> <p>In 1989, the Environmental Management Program was created within the U. S. Department of Energy (DOE) to manage the cleanup and disposal of this site. The Energy Policy Act of 1992 established the United States Enrichment Corporation (USEC) as the nation's uranium enrichment enterprise. In July 1993, DOE leased to USEC all the facilities needed to successfully enrich uranium. These facilities will be returned to DOE when USEC ceases operations. The lease specifies that USEC must provide two years advance notice before returning major facilities to DOE. USEC has announced its plans to move enrichment operations from a gaseous diffusion technology to a centrifuge technology based in Portsmouth, Ohio. Centrifuge testing and facility licensing is currently underway. For the purposes of this WBS dictionary, it is assumed that USEC will announce in 2010 their intention to return the PGDP to DOE.</p> <p>Following completion of the PGDP turnover from USEC to DOE and placement of the plant in cold standby, preparation for the D&D of PGDP will begin. A significant component of the D&D process is the design, construction, operation and eventual closure of a Comprehensive Emergency Response, Compensation, and Liability Act (CERCLA) landfill. This WBS dictionary assumes the design and construction of the CERCLA cell will begin in FY 2017 to support the D&D of the PGDP.</p>			

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<u>LOGIC RELATIONSHIPS</u>		
Interfaces:		
<u>Internal to Contractor</u>		
<ul style="list-style-type: none">• All contractor project managers and staff• All subcontractors		
<u>External to Contractor</u>		
<ul style="list-style-type: none">• DOE Portsmouth/Paducah Project Office and support contractors• DOE Headquarters or other DOE sites (if applicable)• U.S. Environmental Protection Agency (EPA)• Commonwealth of Kentucky (KY)• Site tenants including Uranium Disposition Services, LLC and other DOE contractors• Stakeholders• Citizens Advisory Board and supporting contractor Ed Holmes Incorporated• DOE Integrated Safety Management System (ISMS) Verification Team• Other nonregulatory key interfaces		
Time Sequencing with Other Work:		
<ul style="list-style-type: none">• The CERCLA Cell Construction and O&M is a predecessor to WBS 04.11.11.02 D&D of the PGDP in that disposal space must be available when the D&D waste is generated.• No other current predecessor/successor relationships with other outyear scopes of work exist; however, these may need to be established to fulfill Federal Facility Agreement (FFA) obligations.• No current regulatory or enforceable milestones are associated with this element by the FFA, Agreed Order, or Site Treatment Plan.		
<u>SCOPE DESCRIPTION</u>		
WBS 04.11.11.04.01 CERCLA Cell Management and Integration		
Provide overall management activities associated with this subproject. Activities performed under this subelement include the following:		
<ul style="list-style-type: none">• Perform technical, contractual, and project functions necessary to effectively manage and report scope, schedule, and budget.• Manage and transmit required documents to the Administrative Record.• Maintain all activities within the defined safety, environmental, and quality requirements.• Perform technical and personnel management functions.• Maintain technically qualified and properly trained personnel.• Develop, evaluate, and report project performance metrics.• Interface with DOE, KY, EPA, other prime contractors, and stakeholders, as needed.		
WBS 04.11.11.04.02 Construction of CERCLA Cell		
Construct a CERCLA cell at the Paducah site per the approved design. Construction of the cell is proposed to take place in stages throughout the life of D&D of the PGDP. Disposal capacity will be constructed as needed to keep pace with waste generation activities.		
WBS 04.11.11.04.03 Operation of CERCLA Cell		
Perform day-to-day operations of the CERCLA cell to support GDP D&D operations and ensure compliance with all governing regulations. It is assumed that cell construction activities, disposal operations, and closure activities will take place concurrently and in a manner that optimally supports		

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waste disposal needs of D&D operations.

WBS 04.11.11.04.04 Close CERCLA Cell
The CERCLA cell will be closed section by section as each section reaches its design capacity for disposed waste. Closure activities are proposed to take place over the life of the D&D of the PGDP.

WBS 04.11.11.04.05 Design of CERCLA Cell
Design a CERCLA cell for the Paducah site capable of accepting the projected volume of waste that will be generated during the D&D of the PGDP. The design will be based on the assumptions and estimates identified in the baseline as well as ensure compliance with all applicable regulations.

DELIVERABLES

WBS 04.11.11.04.01 CERCLA Cell Management and Integration
Element Milestones:

- None

Element Deliverables:

- Paducah Contractor Quality Assurance (QA) Project Plan
- Paducah Contractor environmental, safety, and health (ES&H) Plan
- Provide input to the following reports and submittals (if applicable):
 - Monthly Project Performance Report
 - Risk Management Plan Updates
 - Site Management Plan (SMP)
 - Semiannual Critical Analysis Report
 - Presentations
 - Federal Facility Agreement (FFA) briefings
 - Labor Standards Determinations
 - Gold Chart Performance Metrics
 - Annual updates to Site Treatment Plan
 - Annual Compliance Agreement Report
 - Annual ISMS Update
 - Annual Work Smart Standards Update
 - Financial Reporting, Management Analysis Reporting System
 - Annual Statement of Costs Incurred and Claimed
 - FFA Semiannual Progress Report
 - Remedial Action/Regulatory Commitment Tracking Report
 - Other reports/documents, as necessary

WBS 04.11.11.04.02 Construction of CERCLA Cell
Element Milestones:

- N/A

Element Deliverables:

- N/A

WBS 04.11.11.04.03 Operation of CERCLA Cell
Element Milestones:

- N/A

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<u>Element Deliverables:</u> <ul style="list-style-type: none">• N/A		
WBS 04.11.11.04.04 Close CERCLA Cell		
<u>Element Milestones:</u> <ul style="list-style-type: none">• Complete CERCLA cell closure in FY 2040.		
<u>Element Deliverables:</u> <ul style="list-style-type: none">• N/A		
WBS 04.11.11.04.05 Design of CERCLA Cell		
<u>Element Milestones:</u> <ul style="list-style-type: none">• N/A		
<u>Element Deliverables:</u> <ul style="list-style-type: none">• N/A		
<u>REQUIREMENTS</u>		
<ul style="list-style-type: none">• Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)/National Contingency Plan• KY Hazardous Waste Permit (KY8-890-008-982)• FFA for the PGDP• SMP for the PGDP (annual revisions)• Applicable state and federal laws and regulations (applicable or relevant and appropriate requirements)• Contractor ISMS• Applicable contractor plans, policies, and procedures.• Waste acceptance criteria (WAC) for all applicable treatment and disposal facilities that were in effect on April 24, 2006.• Applicable DOE Orders• Applicable Federal Acquisition Regulations		
<p>It is the core value of the Contractor that the safety and health of every worker, the public at large, and our environment are the most important assets that we are entrusted to protect. To accomplish this, an ISMS, based on DOE's ISMS, has been implemented that incorporates the five core functions and is based on the seven guiding principles. The objective of ISMS is to systematically integrate safety and environmental protection into the planning and execution of all work activities. The term safety encompasses Nuclear Safety, Industrial Safety, Industrial Hygiene, Occupational Health, Health Physics, and environmental issues. ISMS requirements flow-down to the Contractor subcontractors. The five core functions are (1) define the scope of work, (2) analyze hazards, (3) develop and implement hazard controls, (4) perform work within controls, and (5) provide feedback and continuous improvement. The seven guiding principles are (1) line management responsibility for safety, (2) clear roles and responsibilities, (3) competence commensurate with responsibility, (4) balanced priorities, (5) identification of safety standards and requirements, (6) hazard control tailored to work being performed, and (7) operations authorization.</p>		
<p>Before a subproject begins, several activities must be completed that demonstrate that all involved in the project have completed rigorous health and safety reviews and that all potential hazards of doing the work have been identified. The routine activities in remedial actions are conducted in accordance</p>		

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with standard operating procedures, activity hazard analyses, and Integrated Safety Management plans. Nonroutine work will require a readiness assessment, as necessary, to ensure complete health, safety, and environmental reviews prior to work start. This assessment is conducted by people experienced in similar kinds of work with the right to examine all aspects of a project about to commence and requires that the project team provide documented evidence that any applicable requirements of the job have been met.

SCOPE ASSUMPTIONS

The D&D project will utilize an on-site CERCLA landfill for the disposal of all approved D&D wastes.

- CERCLA Regulatory Approach
- The proposed CERCLA landfill will accept all wastes generated by the D&D project, including Mixed Low Level Wastes (MLLW), Toxic Substances Control Act (TSCA) wastes, Resource Conservation and Recovery Act (RCRA) wastes, Low Level Wastes (LLW), Technetium-99 (Tc-99) contaminated materials, classified wastes, and asbestos containing materials (ACM).
- The proposed CERCLA landfill will not accept liquid wastes, mercury switches, and certain other select hazardous wastes.
- Transuranic and liquid wastes will be packaged and shipped to an approved off-site disposal facility.
- No size reduction required for mitigation of cell subsidence
- No use of grout, foam, or sand for void reduction
- No size reduction of GDP equipment will be employed for disposal or transportation (however, large tanks will be cut up in accordance with standard demolition protocol).

COMPLETION CRITERIA

WBS 04.11.11.04.01 CERCLA Cell Construction and O&M Subproject Management

- N/A

WBS 04.11.11.04.02

- N/A

WBS 04.11.11.04.03

- N/A

WBS 04.11.11.04.04

- N/A

WBS 04.11.11.04.05

- N/A

RISK MANAGEMENT

N/A

CERCLA AREAS AND SWMUs

None

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BASIS OF ESTIMATE

1. Summary of Site Conditions
The PGDP will be in Cold Shutdown status awaiting start of D&D of the PGDP.

2. Estimating Methods
☐ Parametric ☐ Bottom-Up ☒ Other: Parametric & Bottom-Up

3. Sources of Estimating
Estimate provided by Project Time & Cost.

4. Basis of Estimate (Unescalated Values)
See detail estimate.

WASTE VOLUMES

See attached waste performance metrics, as applicable.

PROJECT SCHEDULE

See attached schedule.

BASELINE BY YEAR

See attached Baseline by Year Report.